

absence of granulation from the ventral surfaces of these two segments, &c.

Prof. Kraepelin states (Mt. Mus. Hamburg, xxx. p. 131, 1913) that he has examined a very young example of *C. laneus* from Coimbatore (Indian Museum Coll.). This specimen is the first one of the genus to be recorded from India, and obviously belongs to the same species as that which is described above as new, for it comes from the same locality. For the reasons already given, however, I think that it is not *C. laneus*, Karsch. With the exception of that sent by Mr. Bainbrigge Fletcher, there is only one specimen of the genus in the British Museum Collection, and, unfortunately, it is not known where it was collected. This specimen is the type of Pocock's *C. cinctipes*—a species now considered to be identical with *C. laneus*. If the specimens of *Charmus* from Coimbatore are really *C. laneus*, Pocock's species should be resuscitated, for it certainly does not belong to the same species.

XVII.—On Bats of the Genera *Nyctalus*, *Tylonycteris*, and *Pipistrellus*. By OLDFIELD THOMAS.

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Nyctalus joffrei, sp. n.

A small species, with short tragus and small *p*¹.

Size about as in *N. leisleri*, smaller than in *N. stenopterus*. General build suggesting a large Pipistrel rather than a Noctule, but the proportions of the digits quite as in *Nyctalus*. Ears short, broad, rounded, their substance unusually fleshy; inner margin convex, tip broadly rounded, outer margin convex, scarcely flattened above, antitragal lobule little developed. Tragus very short, expanded above, its inner margin concave, shorter than its greatest breadth above; outer margin convex, with the usual triangular basal lobe. Tip of fourth metacarpal reaching to the middle of the short first phalanx of the fifth finger. Wings to the ankle just beyond opposite the base of the calcar. Tail-tip projecting. Penis without bone, its prepuce thinly haired, separated into two cushions by a Y-shaped groove.

Colour uniform pale brown above and below.

Skull of a somewhat different shape from that of other species of the genus. The muzzle shorter, broader, with

more strongly developed supraorbital processes. Brain-case more inflated, smoothly rounded; sagittal crest low, not continued back to meet the lambdoid.

Inner incisors shorter than usual, broad, flattened, bilobate; outer small, about half the height of the inner. Canine with a strongly marked secondary cusp halfway up its hinder edge. P^1 minute, about a quarter of the area in cross-section of the small i^2 ; very low, invisible externally, hidden in the angle between the neighbouring teeth. Lower premolars very small, subequal, the tip of the posterior directly behind that of the anterior.

Dimensions of the type (measured on the spirit-specimen):—

Forearm 39 mm.

Head and body 56; tail 39; ear (inner edge) 8; tragus (inner edge) 2; third finger, metacarpal 35.5, first phalanx 14; fifth finger, metacarpal 33, first phalanx 6.5; tibia 15; hind foot 8.

Skull: greatest length 15; condyle to foot of canine 14.2; basi-sinual length 11.4; zygomatic breadth 10.5; breadth on supraorbital processes 7.2; postorbital constriction 4.5; brain-case breadth 8.2; palato-sinual length 5; front of canine to back of m^3 5.1; front of p^4 to back of m^2 3.5; lower tooth-row (exclusive of incisors) 5.5.

Hab. Kachin Hills, Upper Burma.

Type. Adult male. B.M. no. 88. 12. 1. 37. Collected by L. F'ea and presented by the Marquis G. Doria.

This fine bat I had formerly supposed to be referable to *Pipistrellus affinis*, Dobs., of which the only recorded specimen is in Calcutta; but Dobson's measurements of the digits show that that is really a *Pipistrellus*, not a *Nyctalus*.

The known species of *Nyctalus* differ, *inter se*, by hardly any characters but size, so that the distinctions in tragus, skull, and dentition above detailed indicate that the present bat is more distinct from any of them than they are from each other.

The species is named in honour of General Joffre, Commander-in-Chief of the French Army.

TYLONYCTERIS.

While the forearms of the members of the genus *Tylonycteris* are all very nearly of the same length (26–29 mm.), the skulls show a considerable diversity in size, and it is quite evident that several different species or subspecies should be recognized. Moreover, the forearms do not vary in

proportion with the skulls, as specimens with the largest skulls have only the same forearm-length as examples with quite small skulls; the forearms are therefore of practically very little use in distinguishing the different forms.

Working then from the skulls, we find that there are three sizes represented in the series—large, middle, and small,—any one size being, as a rule, alone in a given country; but Java, the type-locality of *T. pachypus*, has both large and middle in it, and it is therefore necessary to settle which of these two is the type-form.

The Museum collection contains a considerable series from Buitenzorg and Tasikmalaja of the middle species, and from Sockaboemi of the large one. In addition, there is a co-typical example of *T. pachypus* acquired from the agent of the Leyden Museum in 1844, and this specimen clearly belongs to the smaller Javanese form, the one we have from Buitenzorg, near the type-locality of *pachypus*, Bantam. I therefore propose to assign the name *pachypus* to this form, the middle in size of the whole series, which has a skull about 11·7–12·0 mm. in greatest length, its maxillary tooth-row (front of canine to back of m^3) 3·8 to 4·0 mm.

In the Philippines (Luzon) we have the smallest form (skull 10·2 mm., tooth-row 3·4), representing *T. meyeri*, Peters, but a similarly small form occurs in Burma, and it should probably bear the name of *T. rubidus*, Blyth, described from Schwe Gyen. It is commonly deep rufous in colour.

Northwards and eastwards from Java occurs the largest species, while in Western India there is a middle-sized form of a peculiar colour, and these two appear to need new names.

Tylonycteris robustula, sp. n.

Body stout and robust, though the forearms are not only not longer, but are even commonly shorter, than in *T. pachypus*. Ears thick and fleshy; tragus short and comparatively broad.

Colour above dark brown; little lighter below. Membranes black.

Skull heavily built, very broad, both across the brain-case and interorbital constriction. Muzzle proportionally short.

Dimensions of the type (measured on the spirit-specimen):—

Forearm 26 mm. (range up to 28).

Head and body 43; tail 27·5; ear 10; tragus 2·2 × 1·5; third finger, metacarpus 26, first phalanx 10; fifth finger, metacarpus 23·5, first phalanx 4·7; tibia 10; hind foot 6·3; breadth of foot-pad 3·5.

Skull: greatest length 12·5; median length 10·2; condyle to front of canine 11·7; interorbital constriction 4·1; breadth of brain-case 7·6; palato-sinual length 4·2; front of canine to back of m^3 4·2 (range up to 4·4); front of p^4 to back of m^2 2·7.

Hab. Malay Peninsula, Borneo, Java, Celebes, Timor. Type from Upper Sarawak, Borneo.

Type. Adult female. B.M. no. 11. 1. 18. 8. Collected and presented by Cecil J. Brooks, Esq.

Tylonycteris aurea, sp. n.

Size and proportions, including general body-bulk, length of forearms, and size of skull, about as in true *T. pachypus*. Ears perhaps rather narrower; tragus rather longer and narrower, its basal lobule with a longer and more acute point.

Colour above yellowish or dull gold, more or less overlaid with brown. Under surface yellowish or buffy. Limbs brown, membranes black, the cushions of wrists and sole also brown, not contrasted white as in *T. pachypus*. It is not certain, however, how far this may depend on methods of preservation.

Dimensions of the type (the italicized measurements taken in the flesh):—

Forearm 29 mm.

Head and body 42; *tail* 32; *ear* 9.

[A spirit-specimen measures:—Head and body 41; tail 30; ear 9; tragus 2·4 × 1·4; tibia 12·5; hind foot 6; breadth of sole-pad 3·8.]

Skull: greatest length 11·6, median length 10·1; condyle to front of canine 11·2; interorbital constriction 3·2; breadth of brain-case 6·7; palato-sinual length 4·4; front of canine to back of m^3 4; front of p^4 to back of m^2 2·6.

Hab. Southern Bombay—Kanara—southwards to Coorg. Type from Astoli, Belgaum. Alt. 2000'.

Type. Adult female. B.M. no. 0. 4. 2. 25. Original number 135. Collected 28th December, 1899, and presented by R. C. Wroughton. Fifteen specimens examined.

“In heavy forest.”—*R. C. W.*

I provisionally use a binomial for this bat, as it is geographically so isolated; but it may hereafter be shown to grade either into the Burmese form (*rubida*) or true *pachypus* of Java.

Pipistrellus imbricatus and its Allies.

So far as the Museum material shows, Java contains three small species of *Pipistrellus*—*P. tralatitius*, *P. imbricatus*, and a species allied to or identical with *P. papuanus*. Putting aside the last-named, we find that *P. imbricatus* differs from the common *P. tralatitius*, not only by its larger ears and broader tragus, but, in the skull, by the peculiar shortening of its muzzle, the definite development of basal pits, the extreme smallness of p^1 , which is only about one-fourth the area of v^2 , and by the fact that the posterior leg of the **Z** on m^3 projects further inwards compared to the anterior one than it does in *tralatitius*.

A series of *P. imbricatus* from Java are all just of the same size, and agree closely with the type (B.M. no. 79. 11. 21. 108*); and two specimens from Kangean, to the east of Madura, may also be assigned to the same form. But a large series from Central Borneo are uniformly much larger, and should evidently be distinguished specifically. These two both have fairly dark wings, while, on the other hand, the representative forms from Sumatra, Billiton, and Engano have whitish or white wings; but I have no specimens available, and cannot say if they have other distinguishing marks. For these the name of *macrotis*, Temm., is available, and I doubt if either *vordermanni*, Jent., from Billiton, or *curtatus*, Miller, from Engano, are really distinct. It may be noted that Mr. Miller first called his Engano specimens *imbricatus*, and then, in describing them as new, distinguished them from *imbricatus* by the exact characters that separate *imbricatus* itself from *tralatitius*—from which it seems probable that whatever specimens of "*imbricatus*" he compared them with were really examples of *tralatitius*.

Pipistrellus kitcheneri, sp. n.

Like *P. imbricatus*, but considerably larger.

Colour of fur a darker and richer brown than in *imbricatus*; under surface rather lighter. Wings smoky greyish,

* On p. 380 of P. Z. S. 1909, B.M. no. 79. 11. 21. 124 was mentioned as the type of *P. tralatitius*, Horsf.; but further examination shows that that specimen, although in the India Museum under the name of *tralatitius*, is really an example of *imbricatus*, while the other one mentioned, the "Lowo-manir," w^1 of Dobson's British Museum Catalogue, was received from Horsfield at an early date as *tralatitius*, and should therefore stand as the type. Its number is 62 a.

becoming lighter on the part external to the elbow, the reticulations prominent.

Skull essentially as in *imbricatus*, but considerably larger, and in the usual correlation with increased size, the ridges are rather better developed and the muzzle is less conspicuously shortened as compared with the brain-case.

Teeth quite as in *imbricatus*.

Dimensions of type (the italicized measurements taken in flesh):—

Forearm 37 mm.

Head and body 56 mm.; tail 41; ear 14.

Skull: greatest length 14; median upper length 11.7; condyle to front of canine 13.6; basi-sinual length 11; constriction 3.7; breadth of brain-case 7; palato-sinual length 5.6; front of canine to back of m^3 4.8; front of p^4 to back of m^2 3.3.

Hab. South Central Borneo. Type from Boentok, Barito River. Alt. 20'.

Type. Adult female. B.M. no. 10. 4. 5. 55. Original number 2101. Collected 1st October, 1909, by G. C. Shortridge. Presented by Oldfield Thomas. Fifteen specimens, all females with one exception.

Readily distinguishable from *P. imbricatus* by its superior size.

Named in honour of Field-Marshal Lord Kitchener of Khartoum.

Pipistrellus sturdeeii, sp. n.

A small species, with narrow delicate skull.

Size small; general build slender. Ears rather shorter and rounder than those of the Japanese *P. abramus*, inner margin rounded at base, but not prominently convex; tip broadly rounded off; outer margin flattened above, slightly convex below, with a well-marked anti-tragal lobule. Tragus of the general type of that of *abramus*, but shorter, its broadest point opposite the lower third of its inner margin; breadth going about $1\frac{2}{3}$ in the length of the inner margin, the latter straight; tip rounded, outer margin evenly convex, basal lobe sharply triangular. Wings to the base of the toes. A narrow postcalcarial lobule. Tail of the usual seven vertebrae, its extreme tip only projecting.

Colour of fur blackish throughout; the wings dark brown, without marked marginal lines.

Skull not much shorter than that of *P. abramus*, but markedly narrower throughout. Muzzle and brain-case smooth, rounded, the ridges little developed. Anterior

palatal incision not broadened, its posterior edge level with the middle of the canine. Posterior palate rather narrow, with an average median point. Basial pits indicated by slight lateral concavities opposite the basilar suture.

Teeth as in *P. abramus*, but smaller.

Incisors short, the anterior prominently bicuspid; outer incisor surpassing the second cusp of the inner one. Large premolar well separated from the canine, the space not filled up by the well-developed anterior premolar, which equals v^1 in area, and stands a little internally. Lower anterior premolar three-fourths the height of the posterior, and rather less than half its area in cross-section.

Dimensions of the type (slightly immature):—

Forearm 30 mm.

Head and body 37; tail 31; ear on inner edge 7.7; tragus (inner edge) 3, breadth 1.7; third finger, metacarpus 27, first phalanx 10; fifth finger, metacarpus 26, first phalanx 7.8; tibia 11; foot (c. u.) 6.

Skull: greatest length 12.1; basi-sinual length 8.7; condyle to front of canines 10.7; interorbital breadth 3.1; breadth of brain-case 6; mastoid breadth 6.4; palato-sinual length 4.3; breadth between outer corners of m^2 4.6; front of canine to back of m^3 4.2; front of p^4 to back of m^2 2.6; lower tooth-series exclusive of incisors 4.3.

Hab. Bonin Islands. Type from Hillsborough Island.

Typ^o. Female in spirit, slightly immature. B.M. no. 91. 2. 2. 3. Presented by H. Seebohm, Esq. Collected by P. A. Holst.

This Pipistrel, from the isolated Bonin group, is distinguishable by its narrow skull, as indicated by the measurements above, and the wide space between its canine and p^4 . It is presumably most nearly allied to the Japanese *P. abramus*.

Named in honour of Admiral Sir F. C. D. Sturdee, R.N.

Pipistrellus principulus, sp. n.

A small species with the short tooth-row of *P. tenuis* and *mimus*, but the skull much more inflated.

Size very small, about as in *P. tenuis* and *mimus*. General external characters as in those species. Ears of normal size, their substance thin; tragus of medium length and breadth, the external basal lobe large and sharply pointed. Wings to the base of the toes. Post-calcarial lobe distinct. Tail with seven vertebræ, its tip projecting.

Colour blackish, but as the specimen is in spirit, the exact

shade cannot be determined. Membranes dark, the hinder edge of the plagiopatagium and interfemoral with an inconspicuous light line.

Skull with a quite unusually swollen brain-case, the interorbital region also very broad and rounded, so that the "waist" of the skull is less marked than usual.

Teeth about as in *P. mimus*. Outer incisor just equal to the well-developed secondary cusp of the inner. P^1 about two-thirds the area of i^2 ; canine and p^4 nearly but not quite touching each other external to it.

Dimensions of the type (measured on the spirit-specimen):—

Forearm 30 mm.

Head and body 39; tail 30; ear 9; tragus on inner edge 3, breadth 1.6; third finger, metacarpus 28.5, first phalanx 11; fifth finger, metacarpus 27.5, first phalanx 7.3; tibia 11.5; hind foot 5.7.

Skull: greatest length 11.3; median length 10; condyle to front of canine 10.2; zygomatic breadth 8; intertemporal breadth 3.8; breadth of brain-case 6.3; height of brain-case from basion 4.5; front of canine to back of m^3 3.8; front of p^4 to back of m^2 2.5.

Hab. Assam. Type from Gauhati.

Type. Adult female. B.M. no. 13. 3. 14. 1. Collected by Mr. S. W. Kemp. Presented by the Indian Museum, Calcutta.

This species, which equals the common Indian pygmy bat, *P. mimus*, in the reduced extent of its tooth-row, differs from that, as from its other allies, by its unusually inflated skull.

XVIII.—*Ants from North and South-West Australia (G. F. Hill, Rowland Turner) and Christmas Island, Straits Settlements.*—Part II. By W. C. CRAWLEY, B.A.

I. Subfam. *PONERINÆ*.

Myrmecia sanguinea, Sm.

Yallingup, S.W. Australia (*Rowland Turner*). ♀.

Euponera (Brachyponera) lutea, Mayr.

Yallingup.

No. 89. *Ithytidoponera* (s. str.) *flava*, sp. n.

♂.—L. 8 mm.